



Armed Forces College of Medicine AFCM



Diarrhea, Malabsorption and IBD

Prof. Mohamed Hassan Fouad, MD, MRCP(UK)
Associate Professor of Internal Medicine, ASU & AFCM

Indented Learning Outcomes (ILOs)



- By the end of this lecture the student will be able to:
 1. Define acute diarrhea and list its causes
 2. Define chronic diarrhea and list its causes
 3. Define malabsorption and list its causes
 4. Define IBD and differentiate between ulcerative colitis and Crohn's disease

Diarrhea Definition



- >3 motions per day
- >300 cc stool
- Too loose stool
- In absence of incontinence
- Chronic Diarrhea is considered in diarrhea >4 weeks

Other Definitions



- Dysentery
 - The passage of bloody stools.
- Organic diarrhoea:
 - with a known structural or biochemical explanation (ie, infection, inflammation, neoplasm)
- Functional Diarrhoea
 - Diarrhoea that is without a known underlying cause. (IBS, Constipation (overflow diarrhea), Anal sphincter dysfunction)

Prevalent Causes



Diagnosis	Prevalence
Functional diarrhea	45%
Infectious diarrhea	11%
Inflammatory bowel disease (IBD)	7%
Malabsorption	5%
Laxative use	4%
Medication-related (includes caffeine and alcohol)	4%
Postoperative diarrhea	2.5%
Malignancies	1%

Causes of Acute Diarrhea



Acute Diarrhea

Small Intestinal

- Profuse (>1L)
- Watery
- Associated with periumbilical pain, gas and bloating
- Usually Non Inflammatory (No fever, pus, RBCs)

Infectious

Giardia
Rota
Cholera
Staph
Bacillus Cereus
E.Coli (Toxigenic/pathogenic)

Non Infectious

GVHD
Food Allergy
Food Intolerance
Drugs
Toxins

Large Intestinal

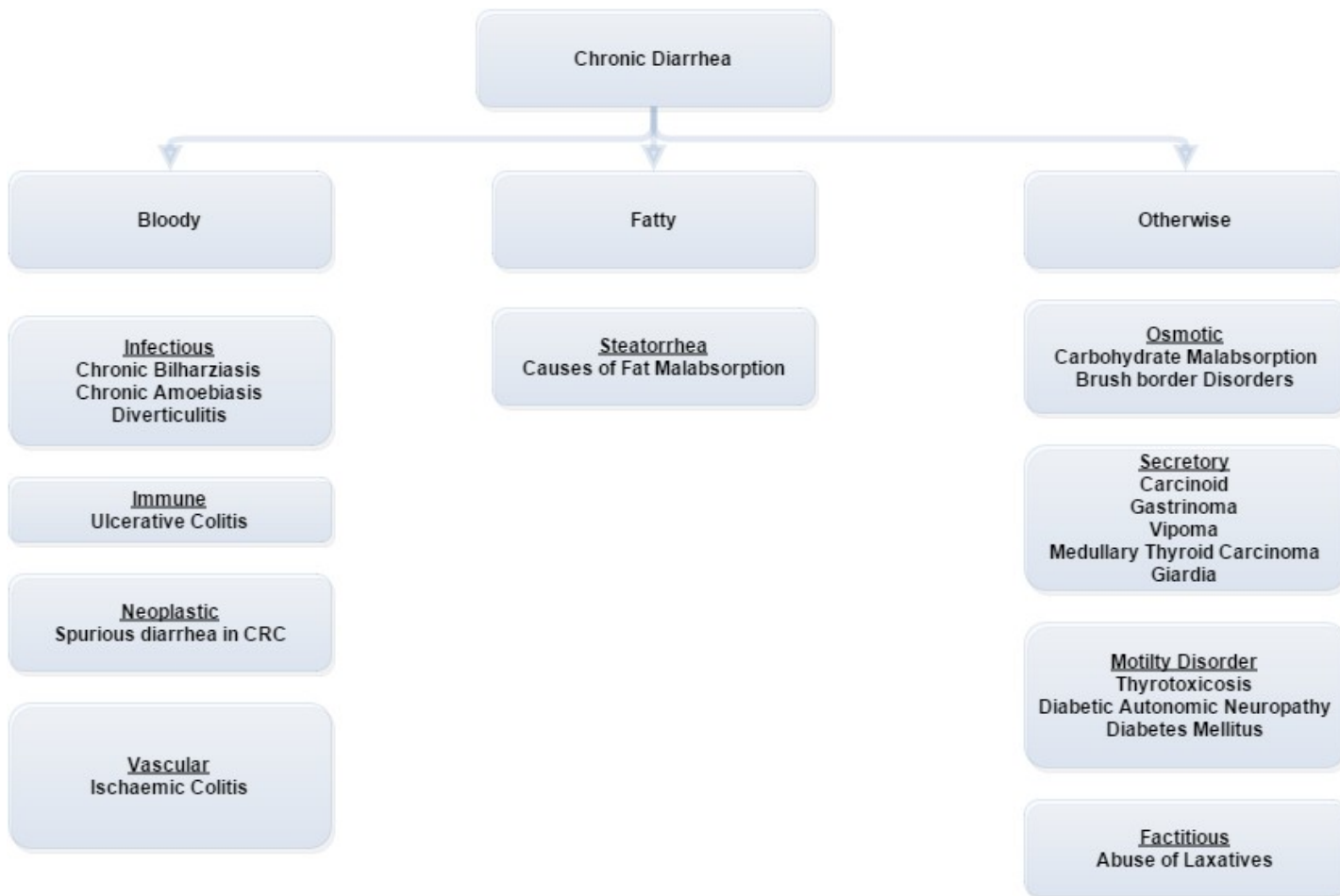
- Low Volume (<1L)
- Bloody
- Urgency/Tenesmus and colonic pain
- Usually Inflammatory (Fever, pus, RBCs, mucous)

Infectious

Salmonella
Shigella
E.Coli (Hemorrhagic/Invasive)
Yersinia
C. Difficile

Non Infectious
Ulcerative Colitis
Ischemic Colitis
Diverticulitis

Causes of Chronic Diarrhea



Alarm symptoms



- Signs of volume depletion:
 - Thirst
 - Fatigue
 - DizzinessMay warrant intravenous fluid resuscitation and/or hospitalization.
- Also look for alarm features in order to identify serious diagnoses:
 - Fever
 - Bloody stools (dysentery)
 - Awakening from sleep
 - Family history
 - Age > 50 with change in symptoms
 - Immunosuppression drugs.

Investigations



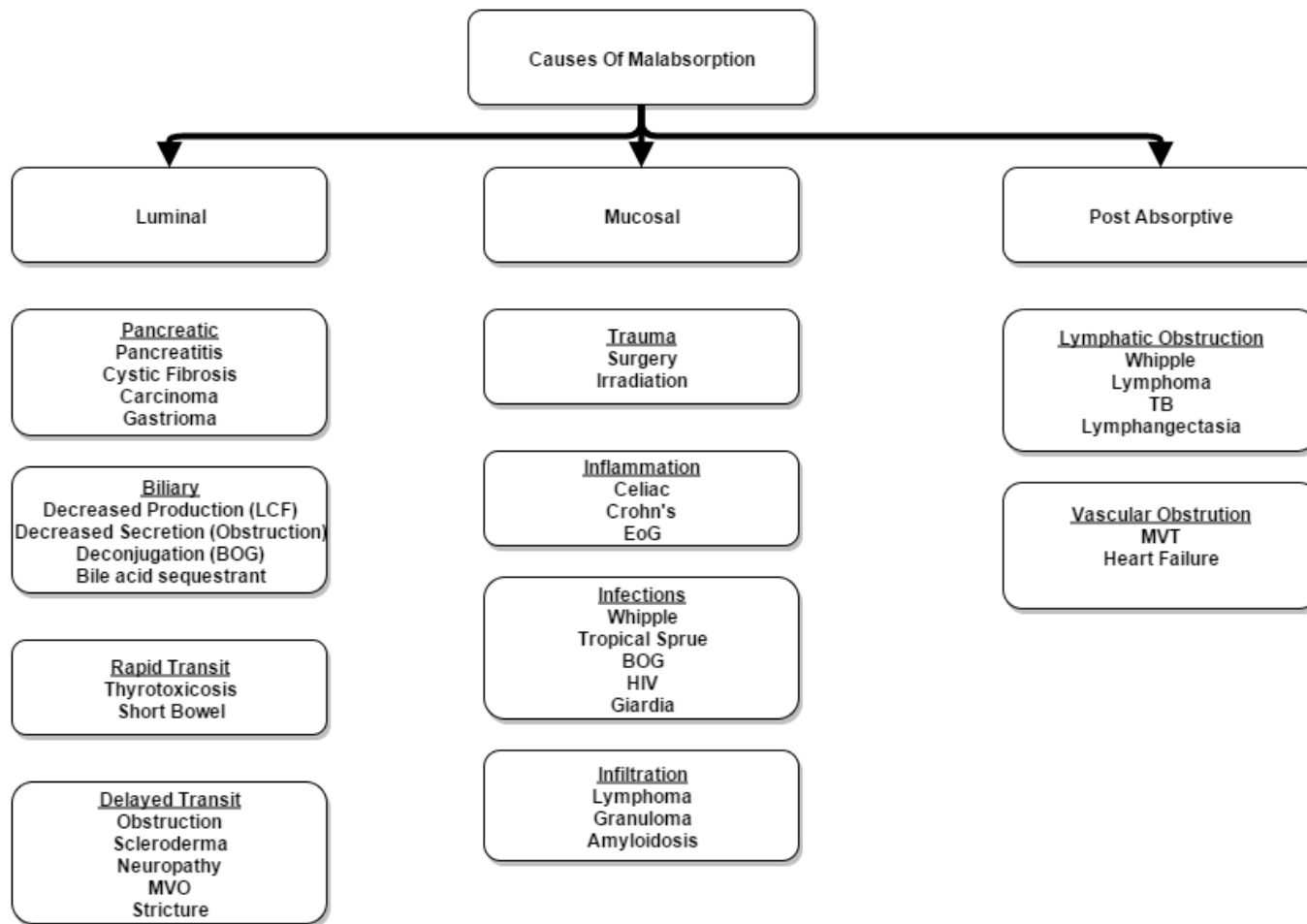
- Stool cultures/microscopy
- Flexible sigmoidoscopy if inflammation suspected
- Biopsies for IBD (Crohn's disease and ulcerative colitis)
- C. difficile toxin: when recent antibiotic use, hospitalization, nursing home, or recent chemotherapy

Management



- Treatment of the cause
- Fluid and electrolyte replacement
- Anti-diarrheal medications (If not infectious)
- Antibiotics: rarely indicated

Causes of Malabsorption



Investigations and Treatment

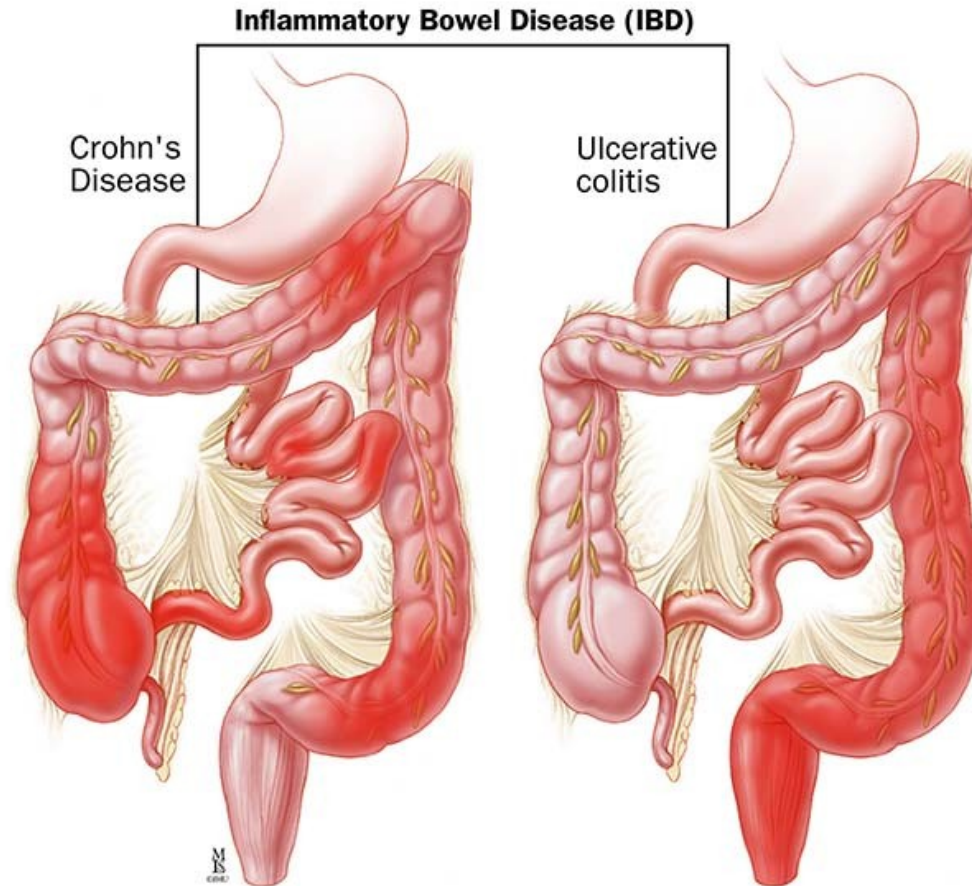


- Anti-TTG (Marker for celiac disease)
- 72 h stool collection (documents steatorrhea)
- Fecal elastase for pancreatic insufficiency
- Stool fat globules stained with Sudan
- Etiology (e.g. CT scan/MRI to visualize pancreas, upper endoscopy/colonoscopy for IBD)

Treatment

- Dependent on underlying etiology

Inflammatory Bowel Disease



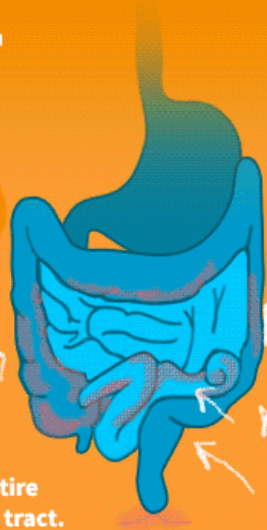
Symptoms



Crohn's Disease

Symptoms

- Abdominal pain
- Diarrhea
- Nausea
- Vomiting
- Weight loss



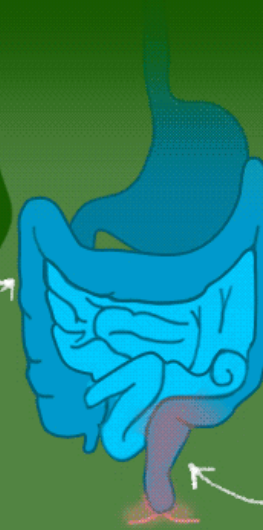
Can affect the **entire** gastrointestinal tract.

Has a **discontinuous** pattern throughout the gastrointestinal tract.

vs. Ulcerative Colitis

Symptoms

- Abdominal pain
- Rectal bleeding
- Bloody diarrhea



Affects **only** the colon.

Starts at the rectum and progresses **continuously** through the colon.

Why it's important to know the differences



Each has **different medications** that are effective.



Each has **different surgical treatment options**.



New treatment options are in development for both diseases.

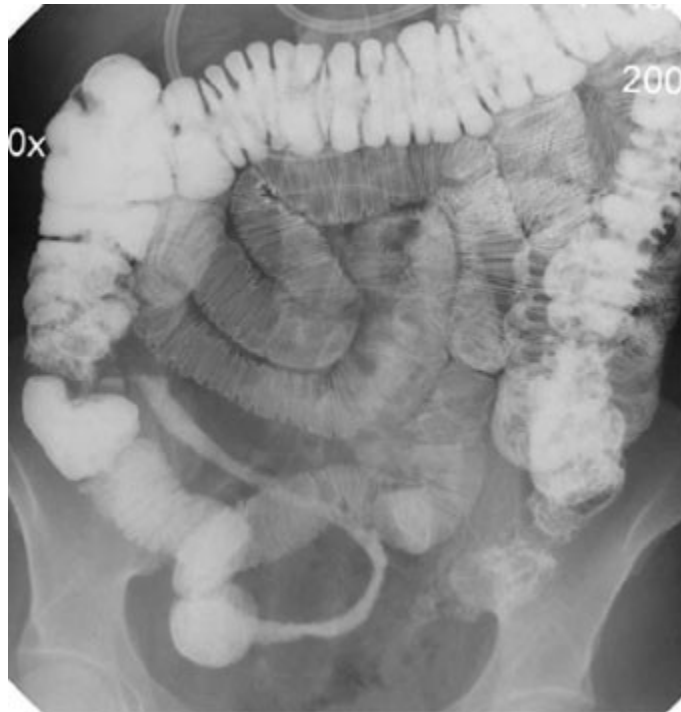
Comparison



COMPARISON OF CROHN DISEASE VERSUS ULCERATIVE COLITIS

	CROHN DISEASE	ULCERATIVE COLITIS
Site of origin	Terminal ileum	Rectum
Pattern of progression	"Skip" lesions/irregular	Proximally contiguous
Thickness of inflammation	Transmural	Submucosa or mucosa
Symptoms	Crampy abdominal pain	Bloody diarrhea
Complications	Fistulas, abscess, obstruction	Hemorrhage, toxic megacolon
Radiographic findings	String sign on barium X-ray	Lead pipe colon on barium X-ray
Risk of colon cancer	Slight increase	Marked increase
Surgery	For complications such as stricture	Curative

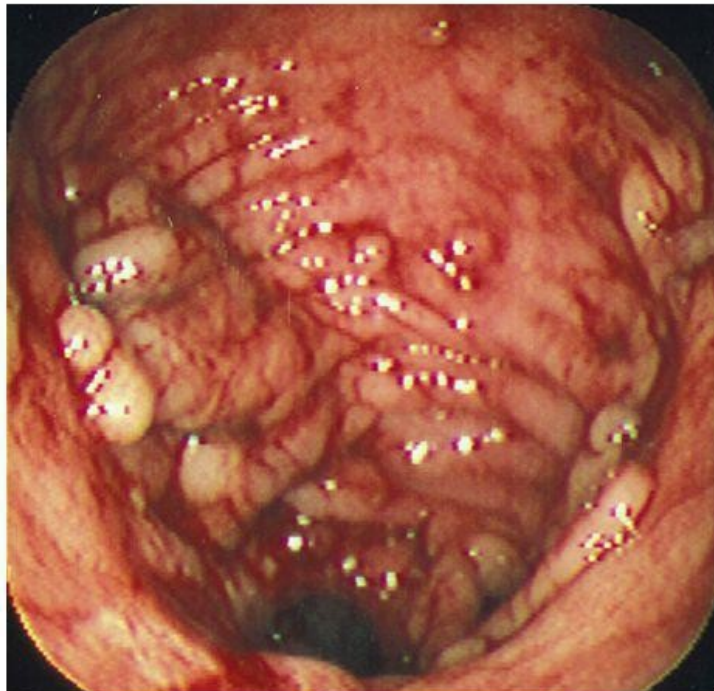
Radiology



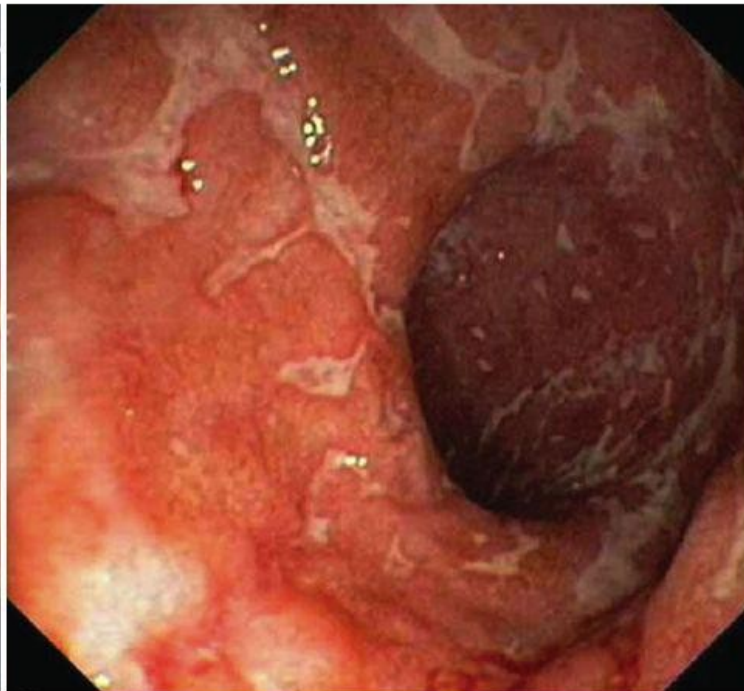
Endoscopy



- In Crohn's, the mucosa has a "cobblestone" appearance due to deep fissuring in the inflamed mucosal tissue
- In UC, the colon appears inflamed and reddened, and ulcers are visible

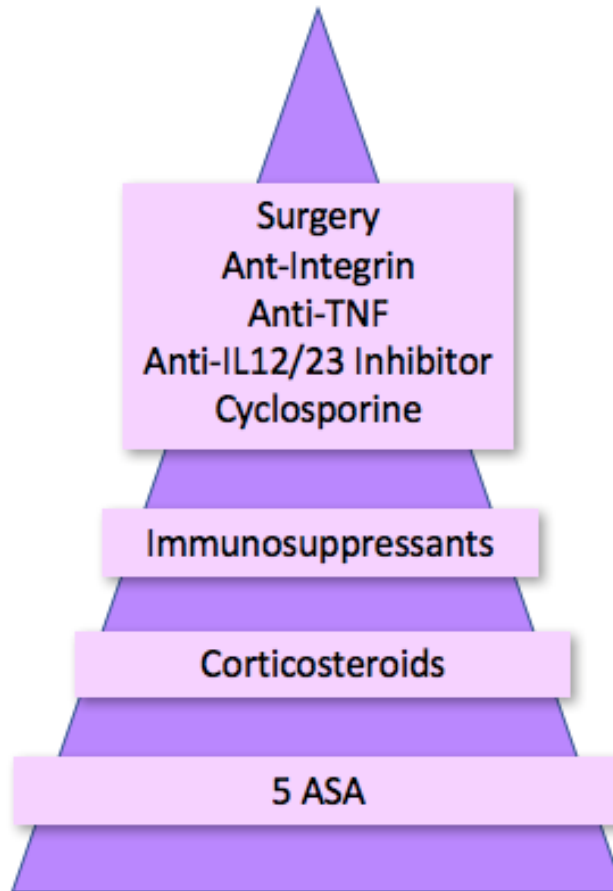


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IBD Treatment



Celiac Disease



Approximately 3 million people in the United States have it.



83% undiagnosed



Known trigger
GLUTEN



AUTOIMMUNE DISEASE

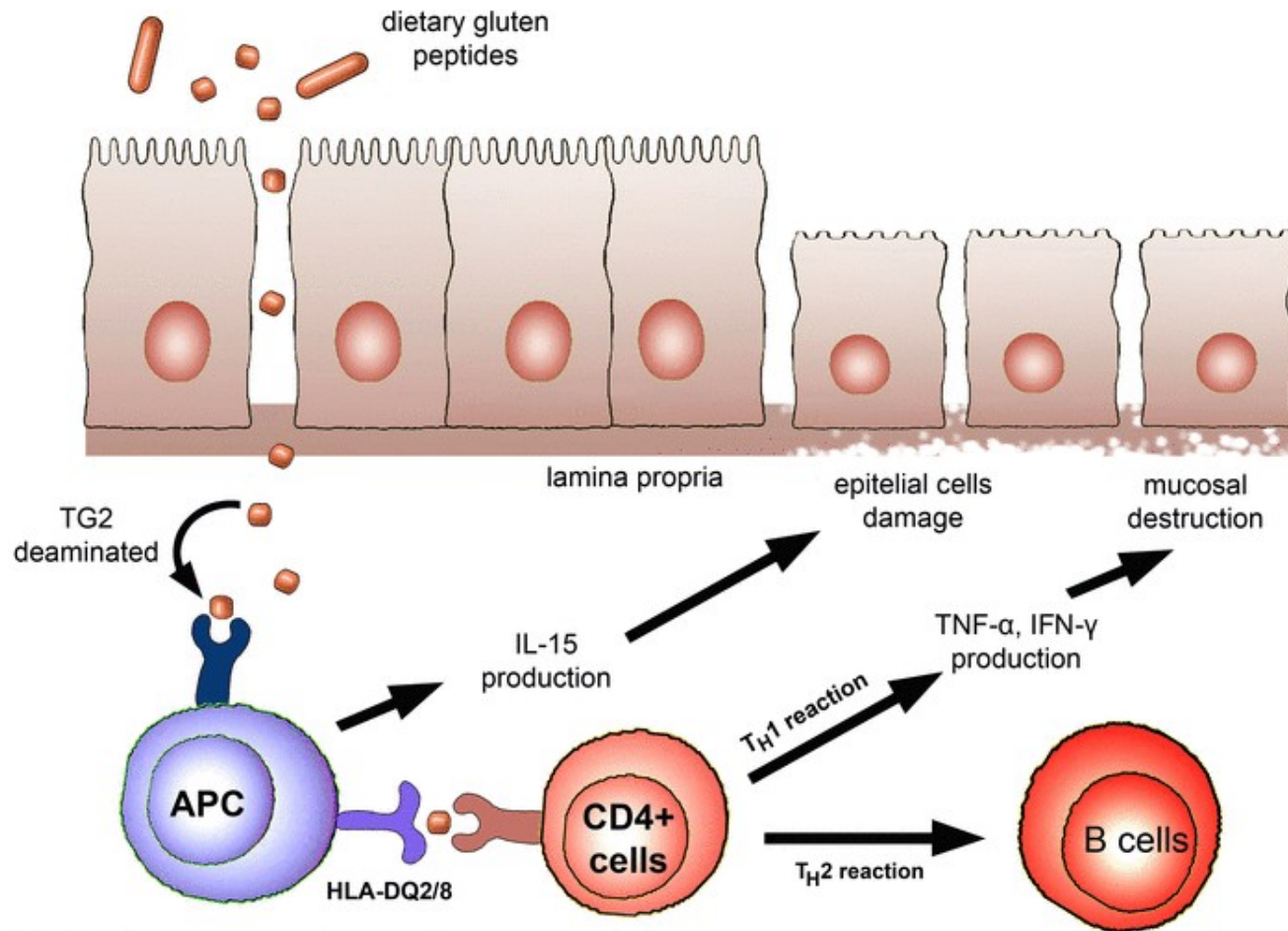


At risk for other serious health consequences such as osteoporosis, anemia, thyroid disease and even certain cancers.

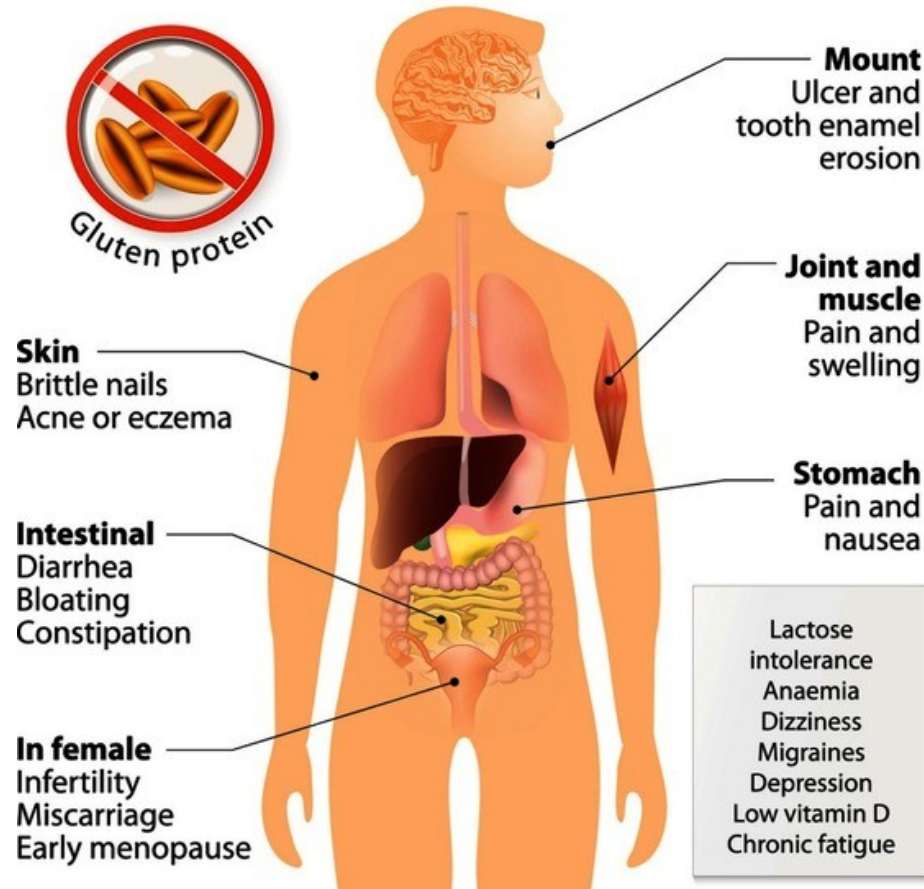


Known treatment
Strict gluten free diet

Pathogenesis



Symptoms



Mouth
Ulcer and
tooth enamel
erosion

**Joint and
muscle**
Pain and
swelling

Stomach
Pain and
nausea

Skin
Brittle nails
Acne or eczema

Intestinal
Diarrhea
Bloating
Constipation

In female
Infertility
Miscarriage
Early menopause

Lactose
intolerance
Anaemia
Dizziness
Migraines
Depression
Low vitamin D
Chronic fatigue

Investigations



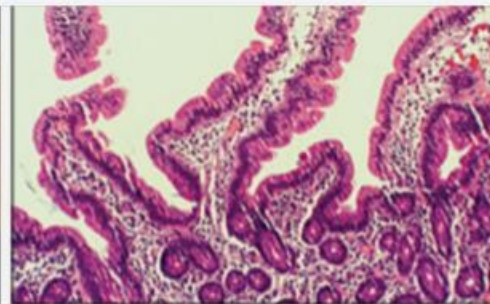
- Anti Tissue Transglutaminase Antibodies
- Anti Endomyseal Antibodies
- Anti Gliadin Antibodies
- CBC: Anemia
- Endoscopy

Diagnosis

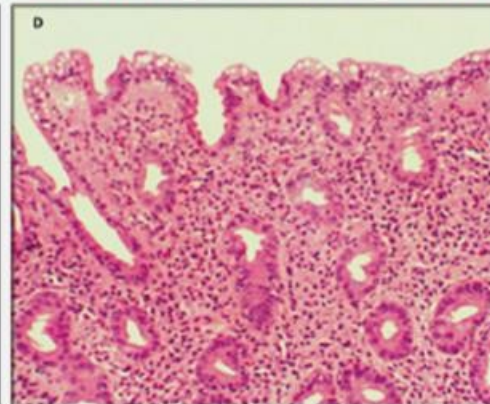
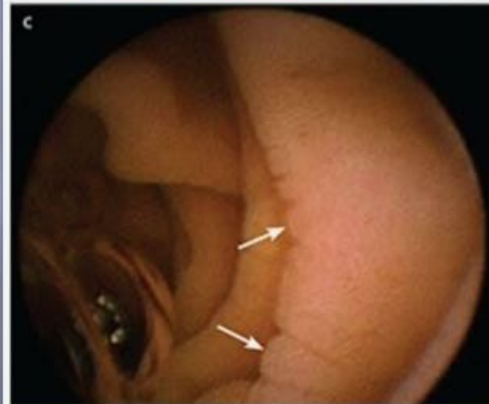


Upper Endoscopy: Scalloping of the duodenal mucosa.
Biopsy: Partial villous atrophy in the duodenum.

Normal



Celiac



Treatment



- Gluten Free Diet

References



- Andreoli and Carpenter's Cecil Essentials of Medicine (8ty edition)
- Toronto Notes 2017



Thank You